



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

ANALYSES, &c.

I.—*Asie Centrale. Recherches sur les Chaines de Montagnes et la Climatologie comparée.* Par A. de HUMBOLDT. (Trois Tomes, 8vo. pp. 570, 558, 614.) Paris. Gide, Libraire-Editeur. 1843. [By the Editor.]

FOR this work the illustrious author informs us, in his preface, we are indebted to the call for a new edition of the ‘*Fragmens Asiaticques.*’ On reviewing the materials which he had been accumulating for twelve years, with a view to that task, he deemed it preferable to compose a work entirely new. ‘*Asie Centrale,*’ however, is still, like its precursor, only a fragment: Baron von Humboldt says,—“not having lost all hope of publishing some day a comprehensive work, projected under the rash title of *Kosmos*, I have, in the present publication, confined myself to mere outlines of the physical structure of the Globe.”

The results embodied in *Asie Centrale* are the fruits of many years’ study. When the author returned to Europe from Mexico in 1804, after an absence of five years, he found no *data* to enable him to institute a comparison between his observations on the line of perpetual snow in the Cordilleras, and any measurement among the Himalayas, Hindu-Kush, Caucasus, or Ararat. Doubts having been expressed in England respecting the prodigious height assigned by travellers to the line of perpetual snow on the northern declivity of the Himalayas, Baron von Humboldt published, in 1816, a memoir, in which he sought to prove that no considerations of terrestrial refraction or the general laws of physics justified such scepticism. In 1820, when the first intimation of the hypsometric observations of Moorcroft and Webb reached Europe, he published a second memoir in support of the opinion that the line of perpetual snow was most probably at between 11,000 and 12,000 feet on the southern declivity of the Himalaya, and not far short of 16,000 feet on the northern. About the same time, or perhaps at an earlier period, his investigations respecting the geography of plants, and the degree of heat required by certain agricultural products, had rendered him sceptical as to the continuity of a great elevated plain in the regions visited by Marco Polo. These inquiries and doubts kindled and kept alive in his breast an eager desire to penetrate into the regions of central Asia for the purpose of comparing its geological structure

with that of South America, with the orographic chart of which he was then busy. A hope of accomplishing this object was held out to Baron von Humboldt when, during the reign of the Emperor Alexander, Count Romanzow invited him to accompany the mission destined to penetrate into Tibet by the route of Kashgar and Yarkand. The war of 1812 broke up this projected expedition. Undiscouraged, our author devoted himself for several years to the study of Persia, in expectation of an opportunity of effecting his purpose by the way of Tehran or Herat. The writings of Klaproth directed him to the rich fund of geological information embedded in the literature of China. Much more valuable and trustworthy contributions from that source have since been put in his possession by M. Stanislas Julien, who has laboured in the field indicated by the energetic and enterprising, but not always very scrupulous Klaproth, with the critical acumen of a sober judgment, and the caution of a sincere seeker after truth. It was after having enriched his mind by means of these preparatory studies that Baron von Humboldt, at the request of the reigning emperor of Russia, undertook, in 1829, a journey to the mountain ranges of the Ural and the Altai, and to the Caspian sea. The work now before us is the ripe fruit of these observations and reflections prosecuted for the long space of little less than forty years.

Asie Centrale is, as we have already stated, a fragment. Its fragmentary character is in part owing to the nature of the materials upon which the author has been obliged to work, which are themselves fragmentary in the last degree. It is also necessarily a fragment on account of the stage of development which the views expounded, or rather indicated in it, have reached in his mind. It is something intermediate between his specific and detailed works on America, and the comprehensive "*Kosmos*," which he tells us he has in contemplation. "Such"—exclaims Baron von Humboldt, when noticing the frustration of his hopes to penetrate into Central Asia—"such is the destiny of man: as he approaches the close of life, he contrasts with a sense of sadness the little he has accomplished with all that he has attempted to extend the domain of science." No man alive has less title to indulge in this despondent strain. It is probable that a "*Kosmos*," condensing the magnificently simple and comprehensive views of nature, to which the varied and extended inquiries of this author are conducting him, into a brief system, will never be completed by himself. It is questionable whether such a work will be possible for a century to come. But whenever it is executed, it will be in the sense of Humboldt's work, who is a lawgiver in science—who has projected the authority of his intellect into unborn time, and stamped the forms in which the thoughts of future natu-

ralists will be cast. Endowed by nature with a universality rare in kind and unprecedented in degree, he has experimented in every department of science;—endowed with an exquisite sense of the beautiful, and a powerful imagination which might have made him a poet of no common order, he has combined into one whole the discordant results of special sciences;—in the true spirit of an inductive philosopher, he has advanced from his detailed inquiries, observations, and experiments in America, and from corresponding operations in Europe and Asia, to general views of the individual structure of the world, and its relative position in the universe;—and even though his life may close before he is able to give utterance to these views with all the completeness and condensation he may wish, still he cannot but feel assured that future thinkers will recognise him as their author. In Humboldt's age there have been more exact and accomplished mathematicians—more learned and precise naturalists—but he stands unrivalled for the largeness of his intellectual grasp, for the success with which he has brought all branches of knowledge to bear upon and elucidate each other, and for his power of stimulating others to labour by his contagious enthusiasm. If the results of his life's labours are to be left in the fragmentary state in which they at present exist, scattered through so many works, the colossal character of the fragments will attest that this has been owing to his being endowed with a sense of the greatness of nature, beyond what it is yet given to the faculties of humanity adequately to express.

'Asie Centrale' consists of two great divisions:—the first is devoted to considerations on the mountain-ranges of that region, and their great geological characteristics; the second to inquiries respecting Asiatic climatology and terrestrial magnetism. In the first of these divisions the author frequently refers to the analogies and to the contrasts which the Cordilleras of the New World and the Alpine region of Europe offer to Central Asia; and in the second he has annexed to the climatology of Asia general inquiries respecting the direction of isothermal lines, the causes of their inflections, and the elevation of the line of perpetual snow, in both hemispheres.

The first division of the work occupies entirely the first and second volumes. It is subdivided into two parts: the first (extending to nearly two hundred and thirty pages of the first volume) contains general views of Asiatic geology; the second, a special orography of Asia.

At the outset the author is careful to define with precision to what region of Asia the term "Central" is with strict propriety applicable. The expressions "central regions," "unknown regions," "interior regions of a continent," are often vaguely and improperly used as synonymous. Travellers in India who have

crossed the Himalaya from south to north, when they reach the Sacred Lakes on the table-land, are still only on the road to Central Asia, and as remote from it as the inhabitants of Siberia under the parallel of Tobolsk, Krasnoïarsk, or the northern extremity of the Baikal. When the configuration of Asia is considered, and the extent of its surface calculated, abstracting the peninsular elongations, it will be found that its centre falls between the parallels of 24° and 65° N., and between the meridians of the Caspian and the South Sea, consequently about $44\frac{1}{2}^{\circ}$ N. lat., 85° E. long. (from Paris). This central point is situated between the mountain chains of Tien-shan and the Altai, not far from Lake Ayar. The distance from Lake Ayar to the shores of the Icy Sea is about $20^{\circ} 12'$ of latitude; to the shores of the Gulf of Bengal, about 22° . Taking the region of Asia which extends to 5° S. and to 5° N. of the mean parallel of $44\frac{1}{2}^{\circ}$ N. as the central region of Asia, a correct enough view, it will be found to comprehend the most southern part of the Altai-Kolyvan, between the parallels of Bukhtarminsk and Ust-Kamenogorsk, and a great part of the Steppe of the Kirghiz. The excursion of Baron Humboldt in 1829 brought him into this region. The bold and successful excursions of M. Vigne only conducted him to about four degrees of latitude south of it. In making this remark, however, our author, with the strong sense of justice to the merits of all scientific collaborateurs, which is one of the finest features in his character, immediately adds: "These numerical considerations, deduced from continental forms, noways derogate from the desert of those who have devoted themselves to perilous enterprises in the Alpine regions of Asia. The importance of an expedition does not depend upon its closer or more remote approach to the centre of Asia, or on the distance of its terminus length from the coast, but on the number and precision of its observations and the light they diffuse on the phenomena of physical geography."

The author's next care is to dissipate the erroneous and exaggerated notions which have prevailed respecting the extent and elevation of a great central Asiatic table-land:—"A plateau of considerable height extends in all probability without interruption in the direction S.S.W. to N.N.E. from the Lesser Bokhara to the country of the Eastern Khalkas and the chain of Khankai. Assuming the correctness of the positions of Pekin and Khotan as determined astronomically by Father Hallerstein and M. Fuss, this continuous table-land lies between the meridians of 79° and 116° E. of Paris, and its northern and southern boundaries are the 36th and 48th degrees of N. latitude. This gives to the plateau of the Sha-mo, or Gobi, an extent of 42,000 to 43,000 square leagues, of 20 to the equatorial degree. Adding to this table-land the high region of Tibet, which is separated from it by the moun-

tain-range of the Kuen-lun, we have, between the northern declivity of the Himalaya and Chinese Mongolia, an elevation of the earth's surface occupying a space of 60,000 to 62,000 square leagues. This is about four times the extent of France, but scarcely larger than the long stripe occupied by the Cordillera of the Andes in South America. Here I compare two kinds of elevations materially differing in form and age. In Asia the axis of the great elevation is directed from S.W. to N.E., and its existence is anterior to that of the great mountain-ranges parallel to the equator about to be described." This elevation, he continues, is far from filling up the immense space of the interior of Asia, though it is beyond doubt the most extensive plateau with which we are acquainted. Its absolute height above the level of the sea is unknown; it has been ascertained only at the northern and southern extremities. Inferences drawn from agriculture and spontaneous vegetation, from a small number of measurements by the barometer and the boiling-point of water, lead to the conclusion that its height is very unequal, and much less than has been supposed. The careful measurements of Fuss and Von Bunge have shown that the part of the Gobi traversed by the caravans from Pekin to Kiakhta, instead of being 8000 feet above the level of the sea, does not exceed 4000. The central part of the Gobi scarcely attains the height of 2400 feet. The *continuous* elevation of the great table-land between the Himalaya and the Kuen-lun does not appear much to exceed 10,000 feet. Shipke on the Sutlej does not reach that elevation, and Kashmir attains only to 5350 feet.

After these preliminaries, and after pointing out the pervading influence of volcanic agency in determining the form of the crust of the globe, and the influence of geological constitution of Asia upon the geographical distribution of plants and animals, meteorological phenomena, the currents of the atmosphere, &c., Baron von Humboldt proceeds to take a general view of the mountain systems of Asia. The first feature that strikes him is the greatness and continuity of the mass of this continent as contrasted with its peninsular extension, Europe, which is channelled and intersected by parallel and recurring seas. The plateau noticed above occupies a considerable portion of this continental mass; but alongside of it is found the most extensive continuous depression of the dry land of the globe—that occupied in part by the Caspian and Aral seas. The plains of Northern Siberia, though somewhat more elevated, are still remarkable for their continuity of depression.

The mountain-ranges of this immense continent present a much greater diversity and complexity of structure than those of America. In the latter continent the single mountain-system of the Andes unites in a narrow zone, 3000 leagues in length, all the

summits which rise more than 8400 feet above the level of the sea. The five mountain-groups east of the Andes (those of Brazil, Parima, Venezuela, the Antilles, and the Alleghanies) have a mean height of 3000 to 4000 feet, and their culminating points do not exceed 3700 feet. The plains of America are of great extent in a *meridional* direction; the Pampas of Buenos Ayres and the Savannas of Louisiana and Canada are covered at one extremity with ice and snow for the greater part of the year, while palms and bamboos flourish at the opposite end. It is owing to this peculiarity that tropical forms of vegetation, and birds natives of tropical regions, are found in America, in regions which can scarcely be called temperate. The principal chains of Asia, on the contrary, are parallel to the equator, and effectually prevent the gradual fading of the equatorial into the polar type of vegetable and animal life. They are crossed moreover by considerable chains parallel to the meridian, which further interrupt the continuity of the plains, isolating the depressed portions of the Asiatic surface, and stamping each with a marked local idiosyncrasy. The chains parallel to the equator are—the Altai, the Tien-shan, the Kuen-lun, the Taurus, and the Himalaya. The systems parallel to the meridian are—the Ural, the auriferous range of Kusnetz, the Bolor-tag, and the Suliman range. Of these, the Altai, Kusnetz, Ural, Tien-shan, Bolor, Himalaya, and Kuen-lun mountains—and along with them the depression which separates the Altai from the Tien-shan, and the region of steppes around the bases of the Ural, Altai, and Tien-shan—are, as belonging to Central Asia, made each the subject of a special memoir in the second part of the first division.

The Altai extends between 50° and $52\frac{1}{2}^{\circ}$ N. lat., from W. to E., from the confluence of the Uba and Irtysh to Mount Gurbi, and the south of lake Baikal. The mountain-system of the Altai contains the sources of the Irtysh and of the Jenisei. The names Sayan, Tangnu, and Malakha are applied to easterly portions of it; beyond the Baikal it abuts upon the mountain-ranges of the Western Khin-gan and Jablonoi Khrebet, which extends from N. E. to S. W. The Altai range occupies a space of 4400 leagues (20 to a degree), or an area equal to that of England. Except at the eastern extremity it is everywhere surrounded by low lands. The Altai cannot therefore, with any propriety, be classed among the mountains which border elevated plains like a line of circumvallation (*Randgebirge*). The elevation of the Gobi only begins at 93° E. of Paris: and the plains which lie around the lakes Dsaisang, Balkash, and Alaktugul, in all probability do not attain the elevation of those on which are situated the cities of Munich, Madrid, and Toledo. The subordinate chains which form the Altai system present a remarkable uni-

formity in their directions. The masses which rise above the line of perpetual snow are all between the parallels of $49\frac{1}{2}^{\circ}$ and 51° . The order in which the ranges succeed each other from S. to N. in this alpine region of the Altai is as follows:—1. The Naryn mountains, between the rivers Naryn and the Bukhtarma. 2. The Sailughem mountains, between the rivers Bukhtarma, Tshuya, and Koksun. 3. The Koksun or Ubinsk range, between the Koksun and the Uba. 4. The alps of Terektinsk, between the Tsharish and the sources of the Koksun and Uba. 5. The range between the Tshuya, the Tsharish, and the Anni. The culminating summits of the Altai are in the second of these ranges. M. Geblér, who made three journeys to the Upper Altai between 1833 and 1835, describes Mount Bialukha (Mount Blanc) the highest summit, as inaccessible, and running up into two pinnacles covered with snow. He estimated its height approximatively at 10,300 feet—rather higher than Etna, and rather lower than the highest summit of the Pyrenees.

The Kusnetzsk system of mountains has a direction from S.S.E. to N.N.W.: it comes in contact with the Altai about 85° E. of Paris, on its northern declivity. The Kusnetzsk mountains have a strong analogy, both in the mineralogical constitution and the direction of the chain, with the Ural. They extend over a line equal in length to that of the Alps or of the Pyrenees; in breadth they appear to occupy nearly a degree of longitude between the parallels 52° and 56° : their elevation is not mentioned. They abound in deposits of gold, which, as in the Ural, is found much more abundantly on the western than on the eastern declivity. Advancing eastward along the northern declivity of the Altai, a third rich auriferous region is found near the confluence of the Jenisei and the Abakan. Baron von Humboldt expresses a wish that some light could be thrown upon the geological relations of this district to the mountainous country of Kusnetzsk. The auriferous soil (and the fact is worthy of attention) extends over a large portion of the north of Asia. Gold has been found from the Ural to the eastern declivity of the Jablonoi Khrebet, and the mountain-region between the Lena and the two Angoras, a distance of 56° of longitude. Gold has also been found at Udskoi, not far from the sea of Okhotsk. It would appear, therefore, that an auriferous belt traverses the old continent between the parallels 50° and 60° , for a distance that exceeds the maximum breadth of Africa. Since 1823 the gold of the Ural mountains has begun to replace that of Brazil; and as the gold-washings of the Ural have become less productive since 1831 and 1832, the gold of eastern Siberia has supplied the deficit. This golden region carries back the imagination irresistibly to the traditions of

the griffins and Arimaspi of Aristæus and Herodotus, in the regions N.E. of the Euxine.

The Ural, an assemblage of nearly parallel mountain-chains, is the most extensive elevation in the direction of S. to N. that is found in Asia. It is an almost isolated system, which extends parallel to the meridian for 700 leagues (20 to the degree), if we take the isthmus between Lake Aral and the Caspian as its southern prolongation, and the mountains of Nova Zembla as its northern terminus. This length is equal to the part of the Andes intercepted between the Straits of Magellan and the bay of Arica, or, to the breadth of Europe, from the southern headland of Peloponnesus to Cape North. Papers, containing valuable information respecting the southern and eastern Ural, communicated to the Society by Mr. Murchison, are preparing for the press, and will appear in the next part of the 'Journal;' under these circumstances we decline following our author at present into his details respecting this range. It may, however, be observed, as indicative of the structure of north-eastern Asia, that the Altai chain, in the direction from east to west, bounds, over a vast extent, the low northern plains of Asia; and that the Ural and Kusnetsk chains, parallel to the meridian, are formations of a different era. They resemble in many of their characteristic features the Bolor and Suleiman mountains, and the Ghauts of southern India. The Altai, Kusnetsk, and Ural ranges also resemble each other in the abundance of their metallic wealth.

The Tien-shan is in its mean direction parallel to the equator. It serpentines between the 41st and 43rd degrees of latitude. It extends from Ming-bulak (or the thousand sources) of the western Buruts to the Chinese city of Kuku-khote (about 200 miles west of the great ocean); that is, from longitude $69\frac{1}{2}^{\circ}$ to $111\frac{1}{2}^{\circ}$ E. of Paris, about eight times the length of the chain of the Pyrenees. Westward of the cross-range of the Bolor, the Tien-shan extends as far as the meridian of Samarkand—the mountains of Asferah, celebrated in the memoirs of Baber. The denomination Tien-shan is strictly applicable only to the portion of the range intercepted between the meridian of the Bolor and the great swelling of the Gobi east of Hami and Barkul. Between lake Chagan and the western extremity of the In-shan (which, although two degrees farther south, is the continuation of the Tien-shan in China proper) the elevation of this range is less obvious, owing to the height of the table-land through which it rises. Baron von Humboldt remarks that the structure of the Caucasus is calculated to suggest the idea of its being a continuation of the great chain of Tien-shan to the westward of the depression around the Aral and Caspian. At the same time he throws out the sug-

gestion that the Taurus may in like manner be considered a continuation of the Hindu-kush. Bold though these speculations may appear, they will scarcely be considered too bold by those who advert to the length of the Andes in the American, and to the great scale of the whole frame-work of the Asiatic continent. The most remarkable heights of this system, in their order from the meridian of the Bolor eastward, are:—The glacier Jeparlé, between Ili and Kutshé; the extinct or dormant volcano (in activity as late as the seventh century) of Pé-shan, nearly on the same meridian as Gulja, on the banks of the Ili, and apparently in latitude $42^{\circ} 25'$ or $42^{\circ} 35'$; the huge mass of the Bogdo-Oola, apparently the culminating point of the range, which towers above the snow-line north of Karashar; the solfatara of Urumtsi, near the town of the same name; and the volcanic mountain between Turfan and Pijan, 540 miles east of the Pé-shan. The country around Bokhara, beneath the western termination of this range, was estimated by Sir Alexander Burnes as about 1100 feet above the level of the sea. From analogies of climate and vegetation Baron von Humboldt infers that the plains of Hami and Turfan, south of the Tien-shan, and west of the Gobi, are not higher than 1760 feet.

The depression, open at its western extremity, which lies between the mountain-ranges of the Altai and the Tien-shan, is intersected by several minor chains, of which the Tarbagatai appears to attain the limits of perpetual snow. A range of lakes, in latitude 45° or $45\frac{1}{2}^{\circ}$, stretches parallel to the base of the Tien-shan. Their names are, the Balkash, or Denghiz, the Ala-gol, the Alaktu-gol, the Borotola, or Bulkhatsi, and the Ayar-nor. M. Fedorew found, by an astronomical observation, the mouth of the river Lepsa, in the Balkash, to be in $46^{\circ} 20' 30''$; its bearing is S.S.W. from the town of Ajaguz, which the same astronomer determined to be in $47^{\circ} 30' 30''$. The lakes Ala-gol and Alak-tugol are three degrees to the eastward of the Balkash. The waters of those three lakes are salt. The shores of the lakes Balkash and Issi-gol are about 200 miles distant from the volcanic mountain of Pé-shan, and about 550 from that of Turfan. The bearing of this fact upon the hypothesis that volcanic action is excited by the filtration of the waters of the ocean through subterranean caverns is apparent in the case of mountains known to have been active volcanoes since the Christian era, and of which the Pé-shan is rather more than 1500 miles distant from the icy sea, and about as far from the mouths of the Indus and Ganges.

On the great depression of the Caspian, and the steppes at the base of the Altai, Thien-shan, and Ural, Baron von Humboldt treats at considerable length. He enters with minuteness and detail both into the questions which have been raised respecting

the positive geography of this region, and respecting its comparative geography. Pages 121 to 364 contain an invaluable digest of the views entertained respecting the geography of the Caspian and Oxus by classical, and Arabian, and European geographers, and of the latest operations of Russian savans and military men. The results of this comprehensive review only can be indicated here. Baron von Humboldt denies the existence of any mountain-chain connecting the Altai and the Ural. He points out, however, that all the isolated groups of hills sprinkled over the steppe which intervenes between these mountain-ranges rise along the line of the watershed between the affluents of the Irtish to the north and of the Sara-su to the south. Even this non-continuous range however, apparently an attempt of nature to continue the Altai range westward, terminates entirely before it reaches the meridian of the Ural, about the meridian $63\frac{1}{4}^{\circ}$ E. of Paris. A depression, of 5° of longitude in length, intervenes between this terminus and the Ural; and the characteristic feature of this depression is an immense number of chains of small lakes, communicating with each other, arranged in a circular form, or like a necklace. In these lakes Baron von Humboldt recognises the traces of an ancient channel of communication between the waters of the Aral and the Icy Sea. The conclusions at which he arrives respecting the ancient junction of the Aral, Oxus, and Caspian are in substance as follows:—

1st. That, at a time before the historical era, but nearly approaching to the terrestrial revolutions which immediately preceded it, the great depression of Central Asia—the concavity of Turan—may have been one large interior sea, connected, on the one hand, with the Euxine, on the other, by channels more or less broad, with the Icy Sea, and the Balkash and its adjoining lakes.

2nd. That, probably in the time of Herodotus, and even so late as the Macedonian invasion, the Aral was merely a bay or gulf of the Caspian, connected with it by a lateral prolongation, into which the Oxus flowed.

3rd. That, by the preponderance of evaporation over the supply of water by the rivers; or by diluvial deposits, or by Plutonic convulsions, the Aral and Caspian were separated, and a bifurcation of the Oxus developed, one portion of its waters continuing its course to the Caspian, the other terminating in the Aral.

4th. That the continued preponderance of evaporation has caused the channel communicating with the Caspian to dry up.

These conclusions are worked out with the wonted caution and extensive and minute inquiry of Baron von Humboldt. Still we must, notwithstanding our deference for his opinion, remain sceptic—

tical as to any communication between the Oxus and the Caspian during the historical period, until we are in possession of more exhaustive, intelligible, and trustworthy information respecting the structure of the country bounded on the east by the Aral and Oxus, on the west by the Caspian, on the north by the line of levels run by Russian engineers from the Caspian to the Aral, and on the south by Burnes' route from Bokhara to Meshed. The definitive result of the trigonometrical levelling between the Black Sea and the Caspian, executed by Messrs. Fuss, Sabler, and Sawitsh (concluded on the 23rd of October, 1837, after seventeen months and a half of assiduous labour), gives the level of the Caspian 81·4 feet below the level of the Euxine.

The Bolor Tag, strictly speaking, extends in the direction of the meridian from $32\frac{1}{2}^{\circ}$ N. to 45° ; but it may be regarded, with perfect propriety, as part of the long series of elevations which extend from the shores of the Icy Sea to Cape Comorin—all parallel to the meridian—each terminating nearly in the parallel of latitude on which that immediately to the south commences—but each, as we advance from north to south, placed farther to the east than the one which preceded it. These ranges are—the Ural, the Bolor, the Paralasa, the Suleiman, and the Ghauts. The uninterrupted continuity of the Bolor from the parallel of $32\frac{1}{2}^{\circ}$ S. of its intersection with the Himalaya, the Kuenlun, and the Hindu-kush, to the parallel of $45\frac{1}{4}^{\circ}$ N. of its intersection with the Tien-shan, appears to be established. This is a line of 780 miles. The culminating points are supposed to exceed 18,000 feet, and are situated between 35° and 40° S.,—about the *knots* formed by the intersection of the ranges parallel with the equator. The southern knot, in particular, appears to have occasioned a colossal elevation of the earth's surface. North of the Tien-shan the height of the Bolor is much diminished, though the Kasyurt has summits that enter the regions of perpetual snow. The Kara-tau appears to be the northern termination of the Bolor; it diverges to the north-east, and sinks down into the plains traversed by the Tshui, which issues from Lake Timurtu. Like the Ural, and most of the other meridional ranges, the Bolor is composed of a number of chains nearly parallel. There are three great passes across it: that of Yarkand, to the north; that of Pamir; and the one traversed by Goes in 1603, and in part explored by Lieutenant Wood.

The Cordillera of the Andes, and the range of Kuen-lun (comprehending under that designation Hindu-kush and the Persian Elborz), are the greatest longitudinal elevations on the face of the globe. The Kuen-lun, and not the Himalaya, is the eastern prolongation of the Hindu-kush, west of the Bolor. The direction of the Kuen-lun, east of the Bolor, is indicated by the

position of the pass of Kara-korum, which is deduced from the position of Khotan, determined astronomically by the Fathers Felix d'Arocha, Hallerstein, and Espinha. These missionaries place Khotan in 37° N. lat., and $78^{\circ} 13'$ E. long. (from Paris). This gives the crest of the pass of Kara-korum $35^{\circ} 50'$ N. and $75^{\circ} 54'$ E. of Paris. This elevated pass, on the crest of which appears to be the watershed between the affluents of the Yarkand river and those of the Indus, is somewhat lower than the summits of the adjoining mountains, which appear to be 18,000 feet in height. The principal eminence of the Kuen-lun is supposed, by Baron von Humboldt, to be about 70 or 75 miles south of Khotan. Farther east the range takes the direction of east-south-east, and is known by the name of A-neu-ta. The Kuen-lun crosses the elevation of the Gobi about $84\frac{1}{2}^{\circ}$ (?) E. of Paris. Its mean direction is disturbed at the eastern boundary of the desert of Makhai, a part of the Gobi, either by the swelling of that plateau, or by the great mountain-knot, rising above the snow-line, which surrounds the Koko-nor. The Kuen-lun extends, intersected at different points by meridional ranges, to the western districts of the province of Kansu.

Thus has the same great thinker—who *made* the geography of America—traced in bold outline the features of the interior of Asia. He has given to the geography of that region an accuracy and precision which it did not before possess; and it must also be kept in mind that his services here are even greater than appear from the work under review, for much of what had been previously accomplished by the distinguished geographers of Berlin was suggested by the partially published investigations of Baron von Humboldt.

The third volume—devoted to the comparative climatology of Asia, and to terrestrial magnetism—although of deep interest to the geographer, belongs more properly to the department of the meteorologist. It lends completeness to the picture of the internal structure of the Asiatic continent contained in the two preceding volumes. Appended to it is a valuable series of routes in Central Asia, supplementary to the one contained in the '*Fragmens Asiatiques*.' There is also a curious extract from unpublished letters of Leibnitz to Peter the Great, suggesting magnetical observations destined to be accomplished one hundred and twenty years after the death of that great philosopher.

We cannot better conclude this inadequate attempt to convey an idea of the stores of information condensed in these three volumes, than with the eloquent expression of the importance of such inquiries which concludes the Introduction to the work:—

"In tracing this picture of the structure of the Asiatic continent and its climate, I have been anxious to confine myself within the limits of

direct observation, and the induction which results from the combination of facts. The character of our age leads me to hope that the severe exactness of science and the precision of numerical statement, are no longer considered incompatible with the free play of thought. Science has revealed to us the traces of numerous revolutions which the globe has undergone. Disdaining the aberrations of a fantastic geology, science has opened, by the constant accumulation of observations, by the improved study of organic remains embedded in rock formations, new ways to penetrate into the depths of time and space. This is one of the great triumphs of human reason and of the manifestations of its power. The felicitous application of scientific methods, the more just appreciation of the relations which bind together all the phenomena and all the forces of nature, ought to exercise a beneficial influence on geographical studies, by extending the horizon they contemplate—on historical pursuits, by throwing light on the influence exercised by soils and climates—on the migrations of races—on physical investigation, by enabling us to generalize our views of the strata of the undulating atmospheric ocean, the earth which it embraces and impregnates, and the distribution of life from the snowy mountain-summits radiant with light, to the dark abysses of ocean.”

II.—*Elémens de l'Histoire du Genre Humain, avec Figures, Plans et Cartes géographiques d'après les Documens les plus récents.* Par M. DALLY, Professeur de Géographie et d'Histoire, &c. &c. Bruxelles, 1842. (Deux cahiers en 4.) [By the Editor.]

THIS publication is an attempt on the part of the author to produce a system of geography of which the classification and arrangement shall be deduced from the natural features of the globe, and which shall present a comprehensive and truthful portraiture of the superficies of the earth, calculated to render the leading events of universal history, and their connection with each other, more easily understood. It is the geographical introduction to a history of the human race.

This general view of geography is divided into three sections :—The first treats of the preliminary information, mathematical and physical, required by the student of systematic geography. This portion of the work admitted of little novelty, but it is characterised by lucid arrangement and neatness of finish in all its parts. The second section treats of the surface of the globe in general; and the third, of the old world in particular. It is in these that the author's peculiar views of the structure of the globe, and of a geographical nomenclature and classification, based upon its natural features, are developed and illustrated.

M. Dally, taking his station (hypothetically) at Behring's Straits, points out two great lines of elevation, winding and unequal, but with a mean direction, the one to the S.E., the other